

# American Journal of Physiology: Endocrinology and Metabolism

No. 1. JANUARY 1991

Characterization of insulin receptor kinase activity and autophosphorylation in different skeletal muscle types <i>S. Azhar, J. C. Butte, R. F. Santos, C. E. Mondon, and G. M. Reaven</i>	E1
Angiotensin II and $\alpha$ -agonist. III. In vitro fetal-maternal placental prostaglandins <i>T. Yoshimura, C. R. Rosenfeld, and R. R. Magness</i>	E8
Effect of training on response to a glucose load adjusted for daily carbohydrate intake <i>F. Dela, K. J. Mikines, M. Von Linstow, and H. Galbo</i>	E14
Effects of intravenous infusion of 17 amino acids on the secretion of GH, glucagon, and insulin in sheep <i>T. Kuhara, S. Ikeda, A. Ohneda, and Y. Sasaki</i>	E21
Body composition and metabolic rate in rat during a continuous infusion of cachectin <i>E. Hoshino, C. Pichard, C. E. Greenwood, G. C. Kuo, R. G. Cameron, R. Kurian, J. P. Kearns, J. P. Allard, and K. N. Jeejeebhoy</i>	E27
Interaction of exercise and insulin action in humans <i>D. H. Wasserman, R. J. Geer, D. E. Rice, D. Bracy, P. J. Flakoll, L. L. Brown, J. O. Hill, and N. N. Abumrad</i>	E37
Effect of systemic hyperinsulinemia on amino acid flux across human legs in postabsorptive state <i>B. Arfvidsson, H. Zachrisson, A.-C. Möller-Loswick, A. Hylltander, R. Sandström, and K. Lundholm</i>	E46
Thyrotropin-releasing hormone in ovine fetus: ontogeny and effect of thyroid hormone <i>D. H. Polk, A. Reviczky, R. W. Lam, and D. A. Fisher</i>	E53
Hormone secretion by isolated perfused pancreas of aging Fischer 344 rats <i>J. W. Starnes, E. Cheong, and F. M. Matschinsky</i>	E59
Hierarchy of glycemic thresholds for counterregulatory hormone secretion, symptoms, and cerebral dysfunction <i>A. Mitrakou, C. Ryan, T. Veneman, M. Mookan, T. Jenssen, I. Kiss, J. Durrant, P. Cryer, and J. Gerich</i>	E67
Energy equivalents of CO <sub>2</sub> and their importance in assessing energy expenditure when using tracer techniques <i>M. Elia</i>	E75
Muscle mitochondrial morphology, body composition, and energy expenditure in sedentary individuals <i>S. P. Kirkwood, F. Zurlo, K. Larson, and E. Ravussin</i>	E89
Hypertension and sympathetic hyperactivity induced in rats by high-fat or glucose diets <i>L. N. Kaufman, M. M. Peterson, and S. M. Smith</i>	E95
Temporal structure of in vivo growth hormone secretory events in humans <i>M. L. Hartman, A. C. S. Faria, M. L. Vance, M. L. Johnson, M. O. Thorner, and J. D. Veldhuis</i>	E101
Leucine kinetics from [ <sup>2</sup> H <sub>3</sub> ]- and [ <sup>13</sup> C]leucine infused simultaneously by gut and vein <i>R. A. Hoerr, D. E. Matthews, D. M. Bier, and V. R. Young</i>	E111
Effect of surgical injury and intraoperative hypothermia on whole body protein metabolism <i>D. P. Taggart, D. C. McMillan, T. Preston, A. Shenkin, D. J. Wheatley, and H. J. G. Burns</i>	E118
Effects of continuous graded total parenteral nutrition on feeding indexes and metabolic concomitants in rats <i>M. M. Meguid, T.-Y. Chen, Z.-J. Yang, A. C. L. Campos, D. C. Hitch, and J. R. Gleason</i>	E126
Glutamine and glucose metabolism in rat splenocytes and mesenteric lymph node lymphocytes <i>G. Wu, C. J. Field, and E. B. Marliss</i>	E141

Distinct but nonadditive effects of epinephrine and cortisol on determinants of glucose tolerance in dogs <i>I. K. Martin, M. J. Christopher, F. P. Alford, and J. D. Best</i>	E148
Intravenous acid infusion stimulates ACTH secretion in sheep <i>C. E. Wood and A. Isa</i>	E154

---

## LETTERS TO THE EDITOR

Indirect calorimetry: comment <i>L. Garby</i>	E162
--	------

## No. 2. FEBRUARY 1991

Ovarian hydroxyeicosatetraenoic acids compared with prostanoids and steroids during ovulation in rats <i>L. L. Espey, N. Tanaka, R. F. Adams, and H. Okamura</i>	E163
Comparison of inhibitory actions of indomethacin and epostane on ovulation in rats <i>N. Tanaka, L. L. Espey, T. Kawano, and H. Okamura</i>	E170
Effect of iodine deficiency and cold exposure on thyroxine 5'-deiodinase activity in various rat tissues <i>C. C. Pazos-Moura, E. G. Moura, M. L. Dorris, S. Rehnmark, L. Melendez, J. E. Silva, and A. Taurog</i>	E175
Glucocorticoid and antimineralocorticoid effects on human sleep: a role of central corticosteroid receptors <i>J. Born, E. R. De Kloet, H. Wenz, W. Kern, and H. L. Fehm</i>	E183
Acute effect of L-carnitine on skeletal muscle force tests in dogs <i>M.-L. Dubelaar, C. M. H. B. Lucas, and W. C. Hulsman</i>	E189
Pathway and carbon sources for hepatic glycogen repletion in dogs <i>A. Mitrakou, R. Jones, Y. Okuda, J. Pena, N. Nurjhan, J. B. Field, and J. E. Gerich</i>	E194
Evidence against important catecholamine compensation for absent glucagon counterregulation <i>P. De Feo, G. Perriello, E. Torloni, C. Fanelli, M. M. Ventura, F. Santeusano, P. Brunetti, J. E. Gerich, and G. B. Bolli</i>	E203
IGF-I and the truncated analogue des-(1-3)IGF-I enhance growth in rats after gut resection <i>A. B. Lemmey, A. A. Martin, L. C. Read, F. M. Tomas, P. C. Owens, and F. J. Ballard</i>	E213
Regulation of parathyroid hormone secretion by plasma calcium in aging rats <i>J. Fox</i>	E220
Adenylate cyclase agonist properties of CGP-12177A in brown fat: evidence for atypical $\beta$ -adrenergic receptors <i>P. J. Scarpace and M. Matheny</i>	E226
Influence of a mixed meal on splanchnic and interscapular energy expenditure in humans <i>T. Brundin and J. Wahren</i>	E232
Decreased thermogenic response to food with intragastric vs. oral feeding <i>L. De Jonge, I. Agoues, and D. R. Garrel</i>	E238
Plasma chromogranin A as a marker of sympathochromaffin activity in humans <i>P. E. Cryer, J. Wortsman, S. D. Shah, R. M. Nowak, and L. J. Deftos</i>	E243
Effects of insulin and phospholipase C in control and denervated rat skeletal muscle <i>M. O. Sowell, K. P. Boggs, K. A. Robinson, S. L. Dutton, and M. G. Buse</i>	E247
Effect of endurance training on sedentary energy expenditure measured in a respiratory chamber <i>L. O. Schulz, B. L. Nyomba, S. Alger, T. E. Anderson, and E. Ravussin</i>	E257
Metabolic effects of IGF-I and insulin in spontaneously diabetic BB/w rats <i>R. J. Jacob, R. S. Sherwin, L. Bowen, D. Fryburg, K. D. Fagin, W. V. Tamborlane, and G. I. Shulman</i>	E262

Effect of a new mineralocorticoid antagonist mespirenone on aldosterone-induced hypertension <i>J. Opoku, M. Kalimi, M. Agarwal, and D. Qureshi</i>	E269
Functional and metabolic consequences of skeletal muscle remodeling in hypothyroidism <i>R. M. McAllister, R. W. Ogilvie, and R. L. Terjung</i>	E272
Utilization of tyrosine dipeptides and acetyltirosine in normal and uremic humans <i>W. Druml, H. Lochs, E. Roth, W. Hübl, P. Balcke, and K. Lenz</i>	E280
Characterization of vasoactive intestinal peptide receptors in rat seminal vesicle <i>L. G. Guijarro, M. S. Rodriguez-Pena, and J. C. Prieto</i>	E286
Immunolocalization, binding, and biological activity of endothelin in rabbit uterus: effect of ovarian steroids <i>M. Maggi, G. B. Vannelli, A. Peri, M. L. Brandi, G. Fantoni, S. Giannini, C. Torrissi, V. Guardabasso, T. Barni, V. Toscano, G. Massi, and M. Serio</i>	E292

---

## SPECIAL COMMUNICATIONS

Description of a direct-indirect room-sized calorimeter <i>J. L. Seale, W. V. Rumpler, and P. W. Moe</i>	E306
---	------

---

## RAPID COMMUNICATIONS

Mechanism by which calcitonin gene-related peptide antagonizes insulin action in vivo <i>S. B. Choi, S. Frontoni, and L. Rossetti</i>	E321
Role of leucine as a precursor of glutamine $\alpha$ -amino nitrogen in vivo in humans <i>D. Darmaun and P. Déchelotte</i>	E326

---

## LETTERS TO THE EDITOR

Microdialysis studies of adipose tissue metabolism <i>S. W. Coppack, P.-A. Jansson, U. Smith, and P. Lönnroth; J. Bolinder and P. Arner</i>	E330
--	------

## No. 3. MARCH 1991

Effect of baroreceptor denervation on stimulation of drinking by angiotensin II in conscious dogs <i>C. K. Klingbeil, V. L. Brooks, E. W. Quillen, Jr., and I. A. Reid</i>	E333
Energy expenditure and substrate metabolism in ethanol-induced liver cirrhosis <i>M. J. Müller, A. Fenk, H. U. Lautz, O. Selberg, H. Canzler, H. J. Balks, A. von zur Mühlen, E. Schmidt, and F. W. Schmidt</i>	E338
Protein-induced changes in energy expenditure in young and old individuals <i>N. K. Fukagawa, L. G. Bandini, P.-H. Lim, F. Roingear, M. A. Lee, and J. B. Young</i>	E345
Insulin resistance in normal rats infused with glucose for 72 h <i>S. R. Hager, A. L. Jochen, and R. K. Kalkhoff</i>	E353
Dose-related effects of epinephrine on glucose production in conscious dogs <i>R. W. Stevenson, K. E. Steiner, C. C. Connolly, H. Fuchs, K. G. M. M. Alberti, P. E. Williams, and A. D. Cherrington</i>	E363
Glycine turnover and oxidation and hepatic serine synthesis from glycine in fetal lambs <i>I. Cetin, P. V. Fennessey, A. N. Quick, Jr., A. M. Marconi, G. Meschia, F. C. Battaglia, and J. W. Sparks</i>	E371
Naloxone augments muscle sympathetic nerve activity during isometric exercise in humans <i>P. A. Farrell, T. J. Ebert, and J. P. Kampine</i>	E379
Dual mechanism of insulin action on human skeletal muscle: identification of an indirect component not mediated by FFA <i>B. Capaldo, R. Napoli, P. Di Bonito, G. Albano, and L. Saccà</i>	E389

Growth hormone, cortisol, or both are involved in defense against, but are not critical to recovery from, hypoglycemia <i>P. J. Boyle and P. E. Cryer</i>	E395
Decrease in muscle glucose transporter number in chronic physical inactivity in rats <i>T. Fushiki, T. Kano, K. Inoue, and E. Sugimoto</i>	E403
Regulation of glucose utilization in human skeletal muscle during moderate dynamic exercise <i>A. Katz, K. Sahlin, and S. Broberg</i>	E411
Suppression of insulin-like growth factor I during epidermal growth factor-induced growth retardation <i>S. D. Chernausek, B. A. Dickson, E. P. Smith, and S. B. Hoath</i>	E416
In vitro pancreatic hormonal pulses are less regular and more frequent than in vivo <i>C. J. Goodner, D. J. Koerker, J. I. Stagner, and E. Samols</i>	E422
Epinephrine inhibits insulin-mediated glycogenesis but enhances glycolysis in human skeletal muscle <i>I. Raz, A. Katz, and M. K. Spencer</i>	E430
Epinephrine increases tricarboxylic acid cycle intermediates in human skeletal muscle <i>M. K. Spencer, A. Katz, and I. Raz</i>	E436
CNS stimulation does not affect hepatic venous glucose concentration in severely diabetic rats <i>H. Miura, A. Iguchi, K. Uemura, A. Yatomi, T. Tamagawa, and N. Sakamoto</i>	E440
Plasma Ca influences vitamin D metabolite levels as rats develop vitamin D deficiency <i>U. Kollenkirchen, M. R. Walters, and J. Fox</i>	E447
Interrelationship between hepatic ureagenesis and gluconeogenesis in early sepsis <i>Y. Ohtake and M. G. Clemens</i>	E453
Decreased expression of glucose transporter in muscle from insulin-resistant patients <i>G. L. Dohm, C. W. Elton, J. E. Friedman, P. F. Pilch, W. J. Pories, S. M. Atkinson, Jr., and J. F. Caro</i>	E459
Protein kinase C in uterine and systemic arteries during ovarian cycle and pregnancy <i>R. R. Magness, C. R. Rosenfeld, and B. R. Carr</i>	E464
Effect of dietary calcium on bone density in growing rabbits <i>V. Gilsanz, T. F. Roe, J. Antunes, M. Carlson, M. L. Duarte, and W. G. Goodman</i>	E471
Diabetes reduces heparin- and phospholipase C-releasable lipoprotein lipase from cardiomyocytes <i>J. E. A. Braun and D. L. Severson</i>	E477
Age-related alterations in pulsatile secretion of TSH: role of dopaminergic regulation <i>S. L. Greenspan, A. Klibanski, J. W. Rowe, and D. Elahi</i>	E486
Postprandial decrease in HDL cholesterol and HDL apo A-I in normal subjects in relation to triglyceride metabolism <i>T. W. A. De Bruin, C. B. Brouwer, J. A. Gimpel, and D. W. Erkelens</i>	E492

#### RAPID COMMUNICATIONS

Growth hormone acutely stimulates forearm muscle protein synthesis in normal humans <i>D. A. Fryburg, R. A. Gelfand, and E. J. Barrett</i>	E499
---	------

#### No. 4. APRIL 1991

Chloride channel blockers inhibit ACTH secretion from mouse pituitary tumor cells <i>S. Heisler</i>	E505
Mechanism of growth hormone-induced postprandial carbohydrate intolerance in humans <i>P. Butler, E. Kryshak, and R. Rizza</i>	E513
Effects of endothelin on in vitro renin secretion <i>O. Moe, A. Tejedor, W. B. Campbell, R. J. Alpern, and W. L. Henrich</i>	E521
Immunological evidence that kidney is primary source of circulating inactive prorenin in rats <i>S. Kim, M. Hosoi, K. Nakajima, and K. Yamamoto</i>	E526

Transferrin enhances the antiproliferative effect of aluminum on osteoblast-like cells <i>K. Kasai, M. T. Hori, and W. G. Goodman</i>	E537
Binding and degradation of NH <sub>2</sub> -terminal parathyroid hormone by opossum kidney cells <i>R. C. Brown, A. C. Silver, and J. S. Woodhead</i>	E544
Role of calcium in dopaminergic regulation of TRH- and angiotensin II-stimulated prolactin release <i>I. S. Login, A. M. Judd, S. I. Kuan, and R. M. MacLeod</i>	E553
Increased insulin action in rats with mild insulin deficiency induced by neonatal streptozotocin <i>M. Kergoat, M. Guerre-Millo, M. Lavau, and B. Portha</i>	E561
Inhibitory effect of octreotide on growth hormone-induced IGF-I generation and organ growth in hypophysectomized rats <i>A. Flyvbjerg, K. D. Jørgensen, S. M. Marshall, and H. Ørskov</i>	E568
GRF treatment of late pregnant ewes alters maternal and fetal somatotrophic axis activity <i>M. M. Blanchard, C. G. Goodyer, J. Charrier, G. Kann, R. Garcia-Villar, A. Bousquet-Melou, P. L. Toutain, and B. Barenton</i>	E575
Plasma pool source for fibrinogen synthesis in postabsorptive conscious dogs <i>W. M. Bennet and M. W. Haymond</i>	E581
Nutritional regulation of glucose transporter in muscle and adipose tissue of weaned rats <i>A. Leturque, C. Postic, P. Ferre, and J. Girard</i>	E588
Effects of calcium on protein turnover of incubated muscles from <i>mdx</i> mice <i>P. A. MacLennan, A. McArdle, and R. H. T. Edwards</i>	E594
Regulation of venous $\alpha$ -adrenergic responses in older humans <i>M. A. Supiano, R. V. Hogikyan, A. M. Stoltz, N. Orstan, and J. B. Halter</i>	E599
Compensatory changes in thyroid blood flow are only partially mediated by thyrotropin <i>M. Michalkiewicz, J. M. Connors, L. J. Huffman, Z. Pietrzyk, and G. A. Hedge</i>	E608
Glucose consumption decreases throughout the brain only hours after portacaval shunting <i>M. R. DeJoseph and R. A. Hawkins</i>	E613
Effect of salivary epidermal growth factor on wound healing of tongue in mice <i>S. Noguchi, Y. Ohba, and T. Oka</i>	E620
Increased sarcolemmal Ca <sup>2+</sup> transport activity in skeletal muscle of diabetic rats <i>Y. Taira, T. Hata, P. K. Ganguly, V. Elimban, and N. S. Dhalla</i>	E626
Vasopressin uptake by hypothalamopituitary axis and pineal gland in guinea pigs <i>B. V. Zlokovic, S. Hyman, J. G. McComb, G. Tang, A. R. Rezai, and M. H. Weiss</i>	E633
rT <sub>3</sub> metabolism in patients with nephrotic syndrome and normal GFR compared with normal subjects <i>E. M. Kaptein, M. T. Hoopes, M. Parise, and S. G. Massry</i>	E641
Neuroendocrine rhythms and sleep in aging men <i>A. van Coevorden, J. Mockel, E. Laurent, M. Kerkhofs, M. L'Hermite-Balériaux, C. Decoster, P. Nève, and E. Van Cauter</i>	E651

# RAPID COMMUNICATIONS

Sarcosine kinetics in pigs by infusion of [1- <sup>14</sup> C]sarcosine: use for refining estimates of glycine and threonine kinetics <i>O. Ballèvre, V. Buchan, W. D. Rees, M. F. Fuller, and P. J. Garlick</i>	E662
---	------

## No. 5. MAY 1991

Increased pyruvate dehydrogenase kinase activity in response to sepsis <i>T. C. Vary</i>	E669
Effects of high salt intake on dopamine production in rat kidney <i>M. Hayashi, Y. Yamaji, W. Kitajima, and T. Saruta</i>	E675
Demonstration of a novel feedback mechanism between FFA oxidation from intracellular and intravascular sources <i>H. Yki-Järvinen, I. Puhakainen, C. Saloranta, L. Groop, and M.-R. Taskinen</i>	E680



Cortical bone maturation in young hypophysectomized rats <i>D. A. Martinez, A. C. Vailas, and R. E. Grindeland</i>	E690
Insulin and glucagon in prevention of hypoglycemia during exercise in humans <i>I. B. Hirsch, J. C. Marker, L. J. Smith, R. J. Spina, C. A. Parvin, J. O. Holloszy, and P. E. Cryer</i>	E695
Catecholamines in prevention of hypoglycemia during exercise in humans <i>J. C. Marker, I. B. Hirsch, L. J. Smith, C. A. Parvin, J. O. Holloszy, and P. E. Cryer</i>	E705
Energy metabolism in single human muscle fibers during contraction without and with epinephrine infusion <i>P. L. Greenhaff, J.-M. Ren, K. Söderlund, and E. Hultman</i>	E713
Rapid effects of mineralocorticoids on sodium-proton exchanger: genomic or nongenomic pathway? <i>M. Wehling, J. Kásmayr, and K. Theisen</i>	E719
Tumor necrosis factor induces skeletal muscle protein breakdown in rats <i>M. N. Goodman</i>	E727
Differential effect of hyperglycemia and hyperinsulinemia on pathways of hepatic glycogen repletion <i>G. I. Shulman, R. A. DeFronzo, and L. Rossetti</i>	E731
Effects of growth hormone on fuel utilization and muscle glycogen synthase activity in normal humans <i>J. F. Bak, N. Möller, and O. Schmitz</i>	E736
Progesterone inhibits K conductance in plasma membrane of cultured renal epitheloid MDCK cells <i>M. Steidl, G. Pinggera, M. Ritter, and F. Lang</i>	E743
Insulin stimulates sodium-dependent phosphate transport by osteoblast-like cells <i>K. J. Kunkler, L. M. Everett, D. K. Breedlove, and S. A. Kempson</i>	E751
Divergence of muscle and liver fructose 2,6-diphosphate in fasted exercising rats <i>W. W. Winder, S. R. Fisher, S. P. Gygi, J. A. Mitchell, E. Ojuka, and D. A. Weidman</i>	E756
Control of glycogenolysis and blood flow by arterial and portal norepinephrine in perfused liver <i>A. Gardemann, U. Jahns, and K. Jungermann</i>	E762
ANG II blocks potassium currents in zona glomerulosa cells from rat, bovine, and human adrenals <i>U. Brauneis, P. M. Vassilev, S. J. Quinn, G. H. Williams, and D. L. Tillotson</i>	E772
Sex differences in central adrenoreceptor-mediated vasopressin response to hemorrhage <i>J. D. Stone, J. T. Crofton, and L. Share</i>	E780
Molecular cloning of a rat uterine gap junction protein and analysis of gene expression during gestation <i>L. M. Lang, E. C. Beyer, A. L. Schwartz, and J. D. Gitlin</i>	E787
Vitamin D independence of small calcium-binding proteins in nonclassical target tissues <i>M. R. Walters, M. E. Bruns, R. M. Carter, and P. C. Riggle</i>	E794

---

#### MODELING METHODOLOGY FORUM

Computer model for mechanisms underlying ultradian oscillations of insulin and glucose <i>J. Sturis, K. S. Polonsky, E. Mosekilde, and E. Van Cauter</i>	E801
---	------

No. 6. JUNE 1991

#### EDITORIAL REVIEW

Hepatic fuel metabolism during muscular work: role and regulation <i>D. H. Wasserman and A. D. Cherrington</i>	E811
---	------

---

Whole body and hepatic insulin action in normal, starved, and diabetic rats <i>S. J. Koopmans, S. F. de Boer, H. C. M. Sips, J. K. Radder, M. Frölich, and H. M. J. Krans</i>	E825
--	------

Fluoride selectively stimulates Na-dependent phosphate transport in osteoblast-like cells <i>T. Selz, J. Caverzasio, and J.-P. Bonjour</i>	E833
Specific neuropeptide Y binding sites in chicken brain <i>M. L. Adamo and R. L. Hazelwood</i>	E839
Insulin regulates insulin-like growth factor I mRNA in rat hepatocytes <i>M. Böni-Schnetzler, C. Schmid, P. J. Meier, and E. R. Froesch</i>	E846
Opiate blockade enhances hypoglycemic counterregulation in normal and insulin-dependent diabetic subjects <i>S. Caprio, G. Gerety, W. V. Tamborlane, T. Jones, M. Diamond, R. Jacob, and R. S. Sherwin</i>	E852
Role of glycogen in control of glycolysis and IMP formation in human muscle during exercise <i>M. K. Spencer and A. Katz</i>	E859
Fraction of hepatic cytosolic acetyl-CoA derived from glucose in vivo: relation to PDH phosphorylation state <i>S. Kaempfer, M. Blackham, M. Christiansen, K. Wu, D. Cesar, T. Vary, and M. K. Hellerstein</i>	E865
Prorenin secretion from human placenta perfused in vitro <i>T. Lenz, G. D. James, J. H. Laragh, and J. E. Sealey</i>	E876
Carbohydrate supplementation, glycogen depletion, and amino acid metabolism during exercise <i>A. J. M. Wagenmakers, E. J. Beckers, F. Brouns, H. Kuipers, P. B. Soeters, G. J. van der Vusse, and W. H. M. Saris</i>	E883
Responses of protein synthesis in different skeletal muscles to fasting and insulin in rats <i>A. G. S. Baillie and P. J. Garlick</i>	E891
Mode of action of chloroquine in patients with non-insulin-dependent diabetes mellitus <i>J. K. Powrie, G. D. Smith, F. Shojae-Moradie, P. H. Sönksen, and R. H. Jones</i>	E897
Effect of AVP on susceptibility of ovine pituitary cells to a cytotoxic analogue of CRF <i>J. Schwartz, T. Pham, A. Rao, and J. W. Funder</i>	E905
Dual adrenergic control of renin during nonhypotensive hemorrhage in conscious dogs <i>M. L. Blair, H. Hisa, C. D. Sladek, K. J. Radke, and F. M. Gengo</i>	E910
Effect of increased carbohydrate utilization potential on cardiac isomyosin in thyroidectomized rats <i>F. Haddad and K. M. Baldwin</i>	E920
Role of glucocorticoid in the regulation of glycogen metabolism in skeletal muscle <i>L. Coderre, A. K. Srivastava, and J.-L. Chiasson</i>	E927
Heterogeneous response to PTH in aging rats: evidence for skeletal PTH resistance <i>J. Fox and M. B. Mathew</i>	E933
Role of free fatty acids in hepatic insulin resistance during late pregnancy in conscious rabbits <i>M. Gilbert, M. C. Pere, A. Baudelin, and F. C. Battaglia</i>	E938
Hormone secretion stimulated by ethanol-induced cell swelling in normal rat adenohypophysial cells <i>N. Sato, X. Wang, and M. A. Greer</i>	E946

---

Subject Index to Volume 23  
 Author Index to Volume 23

E951  
 E959